

Paper Id: 

110101
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Roll No: 

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**B TECH**  
**(SEM-I) THEORY EXAMINATION 2019-20**  
**COMPUTER SYSTEM & PROGRAMMING IN C**

Time: 3 Hours

Total Marks: 70

**Note 1.** Attempt all sections equally & give answers in a neat & orderly manner.

**SECTION A**

**1. Attempt all questions briefly. 2 x 7 = 14**

- a. Give various points of difference between high level & low-level languages.
- b. Name different components of C language.
- c. What do you mean by operator precedence?
- d. What is the advantage of using functions in a program?
- e. Differentiate between Structure and Union.
- f. Enlist different file opening modes in C.
- g. Explain ternary operator in C with example.

**SECTION B**

**2. Attempt any three of the following: 7 x 3 = 21**

- a. Define data types in C. Explain primitive data types in terms of memory size, format specifier and range. Also describe derived and user defined data type.
- b. What is the role of Switch statement in C? Write a program in C that computes the area of different shapes such as Circle, Rectangle, and Square & Triangle.
- c.
  - i) Write a program to print all prime numbers between 1 and 500.
  - ii) Define actual and formal arguments. Write a recursive function to find factorial of a number.
- d. Write a program to sort an array of integers in ascending order using insertion sort.
- e. What do you mean by Macro? Explain types of Macro with example.

**SECTION C**

**3. Attempt any one part of the following: 7 x 1 = 7**

- (a) Describe basic components of a computer with a neat block diagram.
- (b) Differentiate between:
  - (i) Compiler Vs Interpreter
  - (ii) Global variable Vs Extern variable
  - (iii) Syntax error Vs Logical error

**4. Attempt any one part of the following: 7 x 1 = 7**

- (a) Write various points of difference between type conversion and typecasting. What are different escape sequences characters?
- (b) Discuss various operators in C programming with examples. Also draw the precedence table showing Rank of operator and their Associativity.

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5. Attempt any *one* part of the following: 7 x 1 = 7
- (a) A five-digit number is entered through the keyboard. Write a program to obtain the reversed number and to determine whether the original and reversed numbers are equal or not.
  - (b) State the feature of pointers. Write a C program to swap two numbers using concept of pointers.
6. Attempt any *one* part of the following: 7 x 1 = 7
- (a) Write a program to multiply two matrices where size and number of elements of matrices are taken from keyboard.
  - (b) Define a structure for a student having roll number, name and Marks obtained in six objects. Write a program that input the details of 50 students and print the details of only those students who have scored more than 80%marks overall.
7. Attempt any *one* part of the following: 7 x 1 = 7
- (a) Explain storage classes in C. What are the merits and demerits of static and dynamic memory allocation techniques?
  - (b) What are different file opening modes in C? Describe how following functions are used in files:  
fopen( ), getc(), putc(), fclose( ).

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